

AD-A045 813

NATIONAL RESEARCH COUNCIL WASHINGTON DC ASSEMBLY OF --ETC F/G 6/3  
STATEMENT OF THE COMMITTEE ON MILITARY ENVIRONMENTAL RESEARCH O--ETC(U)  
SEP 77

DADA17-69-C-9084

NL

UNCLASSIFIED

ALS-MER-009

| OF |  
ADA045 813



END

DATE

FILMED

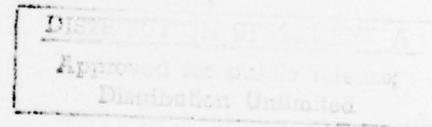
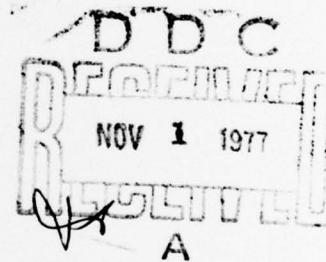
11-77

DOC

AD A045813

1  
S  
B

FOLLOW-UP STATEMENT TO  
STATEMENT OF THE  
COMMITTEE ON MILITARY ENVIRONMENTAL RESEARCH  
ON THE STATUS OF RESEARCH INTO  
BIOLOGICAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS  
AT ROCKY MOUNTAIN ARSENAL



NATIONAL ACADEMY OF SCIENCES  
Washington, D.C.  
September 1977

AD No. \_\_\_\_\_  
DDC FILE COPY

BIBLIOGRAPHIC DATA SHEET		1. Report No.	2.	3. Recipient's Accession No.
4. Title and Subtitle		Statement of the Committee on Military Environmental Research on the Status of Research into Biological Effects of Environmental Contaminants at Rocky Mountain Arsenal. <i>Follow-up Statement.</i>		
7. Author(s)		Committee on Military Environmental Research		
9. Performing Organization Name and Address		14. 8. Performing Organization Rept. No.		
Assembly of Life Sciences National Academy of Sciences 2101 Constitution Avenue, N.W. Washington, DC 20418		ALS-MER-009		
12. Sponsoring Organization Name and Address		10. Project/Task/Work Unit No.		
U.S. Army Medical Research and Development Command Department of the Army Washington, DC 20314		11. Contract/Grant No.		
		15. DADA17-69-C-9084		
13. Type of Report & Period Covered		14. 13. Interim 1/77 - 9/77		
15. Supplementary Notes		14. <i>11 Sep 77</i> 15. <i>12 Sep 77</i>		
<p><i>9. Interim rept. Jan - Sep 77.</i></p> <p>16. Abstracts This report is, as the title indicates, a follow-up to the "Statement of the Committee on Military Environmental Research on the Status of Research into Biological Effects of Environmental Contaminants at Rocky Mountain Arsenal." The U.S. Army Medical Research and Development Command (USAMRDC) is charged with establishing environmental quality standards for the reclamation and renovation of contaminated land areas at military installations, and the Committee on Military Environmental Research (MER) is asked to evaluate the USAMRDC research program and review the findings. In its interim statement of January 1977, the Committee recommended that the decomposition rates and products, under field conditions, of DIMP and DCPD should be determined in soils and water; and additional mutagenic screening tests should be undertaken, because preliminary results were inconclusive. The follow-up statement describes the Army's planned research on the decomposition rates and products of DCPD and DIMP in soils and water under field conditions, as well as the results of the mutagenic screening tests, and gives the Committee's reaction to both.</p>				
<p>17. Key Words and Document Analysis. 17a. Descriptors</p> <p>aerobic; anaerobic; arsenal; biodegradation; carcinogenesis; dicyclopentadiene; diisopropylmethylphosphonate; homogenate; mineralization; mutagenic; <u>Saccharomyces cerevisiae</u>; <u>Salmonella typhimurium</u>; toxicity.</p>				
<p>17b. Identifiers/Open-Ended Terms</p> <p>DIMP; DCPD; NCI; TA; Sprague-Dawley; Aroclor; Ames test.</p>				
<p>17c. COSATI Field/Group</p>				
18. Availability Statement		19. Security Class (This Report)	21. No. of Pages	
Release unlimited		UNCLASSIFIED	5	
		20. Security Class (This Page)	22. Price	
		UNCLASSIFIED		

**INSTRUCTIONS FOR COMPLETING FORM NTIS-35**

(Bibliographic Data Sheet based on COSATI)

Guidelines to Format Standards for Scientific and Technical Reports Prepared by or for the Federal Government, PB-180 600.

1. **Report Number.** Each individually bound report shall carry a unique alphanumeric designation selected by the performing organization or provided by the sponsoring organization. Use uppercase letters and Arabic numerals only. Examples FASEB-NS-73-87 and FAA-RD-73-09.
2. Leave blank.
3. **Recipient's Accession Number.** Reserved for use by each report recipient.
4. **Title and Subtitle.** Title should indicate clearly and briefly the subject coverage of the report, subordinate subtitle to the main title. When a report is prepared in more than one volume, repeat the primary title, add volume number and include subtitle for the specific volume.
5. **Report Date.** Each report shall carry a date indicating at least month and year. Indicate the basis on which it was selected (e.g., date of issue, date of approval, date of preparation, date published).
6. **Performing Organization Code.** Leave blank.
7. **Author(s).** Give name(s) in conventional order (e.g., John R. Doe, or J. Robert Doe). List author's affiliation if it differs from the performing organization.
8. **Performing Organization Report Number.** Insert if performing organization wishes to assign this number.
9. **Performing Organization Name and Mailing Address.** Give name, street, city, state, and zip code. List no more than two levels of an organizational hierarchy. Display the name of the organization exactly as it should appear in Government indexes such as Government Reports Index (GRI).
10. **Project/Task/Work Unit Number.** Use the project, task and work unit numbers under which the report was prepared.
11. **Contract/Grant Number.** Insert contract or grant number under which report was prepared.
12. **Sponsoring Agency Name and Mailing Address.** Include zip code. Cite main sponsor.
13. **Type of Report and Period Covered.** State interim, final, etc., and, if applicable, include dates.
14. **Sponsoring Agency Code.** Leave blank.
15. **Supplementary Notes.** Enter information not included elsewhere but useful, such as: Prepared in cooperation with . . . Translation of . . . Presented at conference of . . . To be published in . . . Supersedes . . . Supplements . . . Cite availability of related parts, volumes, phases, etc. with report number.
16. **Abstract.** Include a brief (200 words or less) factual summary of the most significant information contained in the report. If the report contains a significant bibliography or literature survey, mention it here.
17. **Key Words and Document Analysis.** (a) **Descriptors.** Select from the Thesaurus of Engineering and Scientific Terms the proper authorized terms that identify the major concept of the research and are sufficiently specific and precise to be used as index entries for cataloging. (b) **Identifiers and Open-Ended Terms.** Use identifiers for project names, code names, equipment designators, etc. Use open-ended terms written in descriptor form for those subjects for which no descriptor exists. (c) **COSATI Field/Group.** Field and Group assignments are to be taken from the 1964 COSATI Subject Category List. Since the majority of documents are multidisciplinary in nature, the primary Field/Group assignment(s) will be the specific discipline, area of human endeavor, or type of physical object. The application(s) will be cross-referenced with secondary Field/Group assignments that will follow the primary posting(s).
18. **Distribution Statement.** Denote public releasability, for example "Release unlimited", or limitation for reasons other than security. Cite any availability to the public, other than NTIS, with address, order number and price, if known.
- 19 & 20. **Security Classification.** Do not submit classified reports to the National Technical Information Service.
21. **Number of Pages.** Insert the total number of pages, including introductory pages, but excluding distribution list, if any.
22. **NTIS Price.** Leave blank.

NOTICE

The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the Councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the Committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

A photograph of a document page. At the top, there is a table with several rows. The first row has columns for 'Title', 'Author', 'Editor', 'Section', and 'Section'. The 'Section' column contains the text 'White Section' with a checked box next to it. Below this table is a large, bold letter 'A' written in black ink. To the right of the 'A', there is a checkmark in the same 'White Section' box. The rest of the page is mostly blank.

The work on which this publication is based was performed pursuant to Contract No. DADA17-69-C-9084 with the Department of the Army.

FOLLOW-UP STATEMENT TO  
STATEMENT OF THE  
COMMITTEE ON MILITARY ENVIRONMENTAL RESEARCH  
ON THE STATUS OF RESEARCH INTO  
BIOLOGICAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS  
AT ROCKY MOUNTAIN ARSENAL

The U.S. Army Medical Research and Development Command (USAMRDC) has been conducting a research program to establish environmental standards for the land renovation program at the Rocky Mountain Arsenal near Denver, Colorado. Early in the program, diisopropylmethylphosphonate (DIMP) and dicyclopentadiene (DCPD), two contaminants that were believed to have originated in waste-disposal operations on the military reservation, were detected in ground water off post. An extensive literature review indicated that insufficient data were available to propose environmental standards. Contracts were immediately awarded to produce the required information.

To provide guidance in design and implementation of programs to minimize any off-post hazard, the USAMRDC in August 1976 requested that the Committee on Military Environmental Research (MER) review proposed temporary guidelines that were based on results of acute and subacute toxicity studies. These guidelines were to be used until the results of lifetime feeding studies could be obtained. In its interim statement "... on the Status of Research into Biological Effects of Environmental Contaminants at Rocky Mountain Arsenal," dated January 1977, the committee recommended that

1. the decomposition rates and products, under field conditions, of DIMP and DCPD should be determined in soils and water;
2. because preliminary results were inconclusive, additional mutagenic screening tests should be undertaken.

Consideration was given to subjecting the compounds to the full National Cancer Institute (NCI) carcinogenesis protocols should they be found mutagenic in the screening tests.

Prior to a committee meeting on May 23, 1977, the members were provided with copies of the reports of two contractors that had independently rerun the mutagenic screening tests on DIMP and DCPD. In these tests the contractors used Salmonella typhimurium strains TA-1535, TA-1537, TA-1538, TA-98, TA-100, and Saccharomyces cerevisiae strain D4. In the activation system, homogenate from Sprague-Dawley adult male rat livers induced by Aroclor 1254 was used. All tests were negative.

At the May 23, 1977 meeting, committee members were briefed on the Army's plans for research on the decomposition rates and products of the contaminants in soils and water under field conditions. The degradation studies will cover aerobic and anaerobic conditions in water, in the light, and in the dark. Biodegradation studies will include the rate of disappearance from water, the rate of mineralization in both water and soil, and the products of biodegradation.

In response to the briefing and the review of the mutagenicity test results, the committee submits the following statement:

The Committee on Military Environmental Research has been briefed on the proposed research plan to investigate the degradation of DIMP and DCPD in natural bodies of water and in the soil. It agrees with the general outlines of the research proposed.

The committee has reviewed the follow-up mutagenicity studies that were undertaken as a result of its earlier recommendation to the USAMRDC. The results of these independent studies, both of which used the Ames test indicate

that the previous problems concerning the initial Ames studies on DIMP and DCPD have been resolved. Based on the negative findings, there is no compelling reason for undertaking the NCI carcinogenesis protocols at the present time.